DOCUMENT RESUME

ED 068 183 PS 005 933

AUTHOR	Paulson, F. Leon
TITLE	The Oregon Preschool Test of Interpersonal Cooperation: Preliminary Results.
SPONS AGENCY	Children's Television Workshop, New York, N.Y.
PUB DATE	Apr 72
NOTE	13p.; Paper prepared for presentation at the Annual Meeting of the Western Psychological Assoc., Portland, Oregon, April, 1972
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Behavior Patterns; Child Development; *Group Activities; *Interpersonal Relationship; *Preschool Children; *Psychological Testing; *Social Behavior; Tests
IDENTIFIERS	*Oregon Preschool Test of Interpersonal Cooperation

ABSTRACT

Preliminary results are presented for an instrument to measure social behavior of preschool children, focusing on cooperation. Cooperation is defined either as behavior for the joint gain of the participants in an interaction or behavior in which each child attains his individual goal. The Oregon Preschool Test of Interpersonal Cooperation (OPTIC System), a situational test which permits systematic observations of behavior in realistic contexts, elicits cooperative responses and permits social behavior to be quantified. Several conclusions are drawn: 1) The tendency for children to cooperation varies with situation; 2) The behavior of each member of a pair cannot be treated as statistically independent; 3) Cooperation defined as a complex, heterogeneous concept accounts for a small but relatively stable amount of variance across situations; 4) The data indicate reasonable internal stability of the measure; and 5) Relationships between age, sex, and frequency of cooperative responses were noted. (LH)

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

ED 068183

PAPER #6

SOCIAL GOALS PROJECT

THE OREGON PRESCHOOL TEST OF INTERPERSONAL COOPERATION: PRELIMINARY RESULTS

F. Leon Paulson

TEACHING RESEARCH
Monmouth, Oregon 97361

A paper prepared for
presentation at the annual meeting
of the Western Psychological Association
Portland, Oregon
April 1972

PS 005933

FILMED FROM BEST AVAILABLE COPY

THE OREGON PRESCHOOL TEST OF INTERPERSONAL COOPERATION: PRELIMINARY RESULTS[1]

F. Leon Paulson
Teaching Research

This report describes preliminary results with an instrument to measure social behavior of preschool children. The study focuses on Cooperation. Cooperation is defined either as behavior for the joint gain of the participants in an interaction or behavior in which each child attains his individual goal.

With important exceptions, the literature on child development contains few systematic programs of research on cooperation in preschoolers. Educational programs such as Head Start have placed heavy emphasis on intellectual development. Most of the research has reflected this emphasis. For example, there has been an interest in the effects of child-adult interaction on intellectual performance (Sacks, 1952; Harter, 1967; Jacobson, Berger, Bergman, Millham, and Greeson, 1971).

Research has also been conducted on sharing, a behavior often considered a subset of cooperation (Doland and Adelberg, 1967; Fisher, 1963; Handlon and Gross, 1959; and Presbie and Kanareff, 1970). Usually, the investigators have asked the children if they were willing to share. However, they have not observed the subjects in contact with other children. Instead, they have asked the subjects to respond to a representation of a child, e.g., a photograph or imaginary playmate. Thus a symbolic, non-social medium is used to assess a behavior that is likely to occur only in a specific social context.

The pioneering research of Parten (1932, 1933) was an important attempt to present systematic data on children interacting with each other. Parten categorized social interaction and observed how often these social interactions occurred. More recently, Pena and Miller (1971) have examined a wide variety of social interaction in small groups of preschool children. They too recorded the frequency of events falling into certain categories. Torrance (1970) related the group behavior of 5-year-olds to their prior educational experiences. Madsen and his associates (e.g., Nelson and Madsen, 1969) have examined the interaction of preschool children in structured game-like situations. They examined such variables as the conditions under which children cooperate or compete.

---

[1] The research on which this paper is based was supported by a contract with Children's Television Workshop.

The Oregon Preschool Test of Interpersonal Cooperation (OPTIC System) is a system designed to assess cooperative behavior of preschoolers. It is a situational test (see Weislogel and Schwartz, 1955). That is, it permits systematic observations of behavior in realistic contexts. The scoring categories were based upon observations of interactions among preschool children. The observations have been described elsewhere (McDonald and Paulson, 1971; Paulson, et al, 1971a).

THE OPTIC SYSTEM

The OPTIC System consists of two parts. The first is a set of situations designed to elicit cooperative responses. The second is a scoring system that permits social behavior to be quantified. A brief description of the testing procedure follows.

The examiner (E) brings two preschool children (Ss) into a testing room. Two adults (Sc--the scorers) are already seated in the room. Sc's appear aloof and unresponsive. E leads Ss to a cardboard structure somewhat resembling a house. This house consists of a large, unwieldly, cardboard roof supported by four pillars. Each pillar is constructed out of four precariously stacked blocks. Ss are permitted to examine the structure for a few seconds. Then E encourages them to knock it down. After Ss have done so, he asks them to reassemble the house. The assembly of the house becomes the first test situation.

This Build-a-House situation is followed by four other situations. In the Draw-a-House situation, a large piece of paper is fastened to the floor. A house has been outlined on it. Ss are asked to complete the drawing. In the Tug-the-Rope situation, Ss must coordinate, pulling opposite ends of a string in order to make a cardboard figure spin. The Draw-a-Man situation is similar to Draw-a-House, but requires Ss to draw a picture of one man. However, no outlines are provided on the paper. Finally, Ss are given two piles of six cardboard blocks and are asked to construct a stack taller than they are. The unsteady nature of the structure requires that Ss work together.

After giving directions, E withdraws. Ss are allowed from one to five minutes on each problem. Every six seconds Sc records the level of cooperative behavior of each S.

The Sc's rate the children on a five point scale. The levels are (a) cooperation, (b) precooperation, (c) active interaction, (d) minimal interaction, and (e) obstructive interaction. The highest score is award-

ed cooperative interaction and the lowest score to obstructive interaction. The scoring system is presented in Table 1.

Training of Test Administrators

In the present study, Sc's underwent two days of training on the scoring system. The first part of the training was to study the categories (Paulson, et al, 1971b) and to score a series of video taped interactions of children performing in the test situations. Sc's were required to reach a criteria of 85% agreement on criterion tapes (with no discussion permitted). Several additional practice sessions were conducted with preschool children in the actual test setting.

E s were required to memorize all instruction and learn responses to a large number of contingencies (See Paulson, et al, 1971b). Each had "cue sheets" that served as reminders when memory failed. All E s were female (during pilot testing it was found that children were more at ease with female E s).

Scoring

Ss were tested in pairs with one Sc observing each child. Sc observed S continuously, glancing away only long enough to enter a single digit on the score sheet. Sc's were paced by a tape recorded voice which read off the six second scoring intervals. The voice was heard through earphones connected to the same tape recorder output to ensure that both Sc's scored the same interval simultaneously. The scorers were instructed to score the first interaction that occurred after the timed impulse on the tape. The score used in the data analysis is the frequency of responses in each category (See Table 1) per 100 responses over the first 2 minutes of the interaction.

A six second scoring interval was chosen for two reasons. First, when an interval longer than six seconds was used, more than one scoreable social event was likely to occur within any one interval. On the other hand, the requirement of scoring shorter intervals interferred with the relatively continuous monitoring needed to interpret the interaction of the Ss.

Table 1

Summary of OPTIC System Scoring

Level of Interaction	Score	Category	Examples
IV	4	Cooperation	Combining Skills and Resources, Exchanging, Distributing: Behavior for the Joint gain of the participants, or for the partial or complete acquisition of the individual goals of the participants.
III	3	Pre-Cooperation	Sharing Ideas, Direction giving and taking and other attempts to cooperate: may include intimidation and other conflict resolutions if the potential for cooperation is high.
II	2	Active Interaction	Verbal interaction, copying or listening, working actively side-by-side but focusing on a different or separate product, no joint product results.
I	1	Minimal	Withdrawal, watching, with little movement and no verbal behavior: It is never apparent that one child is responding to another child even though some side-by-side activity is occurring.
0	0	Obstructive Interaction	Verbal criticism Taunting or other Physical prevention of attainment of joint product.

Subjects

Ss used in the present study were sixty (60) children from three day care centers in New York City. Half were boys and half were girls. Within each sex group, half were four year olds and half five.

The analyses are reported on only 48 Ss. Six S's were discarded because of procedural problems while six others were discarded in order to achieve equal N's in each treatment condition. All Ss were tested in same-sex pairs, and each was paired with the same partner on all five situations. Ss were paired with a partner of the same age group.

RESULTS

The data were first examined to determine how responses distributed by category. Table 2 presents the percentage of responses in each category for each situation. It will be noted that 88% of the responses fell into the two categories--active interaction or cooperation. In the analyses that follow, the frequency with which Ss emit Level III or Level IV responses in each situation is used as the raw score on that situation. This procedure avoids the necessity of assuming evenly distributed scores across category.

While data were collected on 48 Ss, these Ss were tested in 24 pairs. The data were examined to determine the degree to which the scores of the members of each pair could be considered independent for purposes of the analysis. Correlations between the two Sc's, each observing one member of each pair are presented in Table 3. The correlations vary from moderately high to very high. Thus, the scores assigned each member of the pair are not independent of the score earned by his partner in the interaction. Therefore, the analyses which follow were computed using the mean of the scores assigned the members of each pair.

Intercorrelations among the five situations were computed to determine whether or not performance in any one situation was related to performance on the remaining situations. The results are presented in Table 4. Four of the five situations show low, but consistently positive intercorrelations. One, Tug-the-Rope, failed to correlate with the other measures. The intercorrelation among four of the situations supports the view that cooperation is complex and heterogeneous behavior accounting for a small, but consistent portion of the variance observed in Ss behavior.

PS 005633

TABLE 2

PERCENT OF RESPONSES
IN EACH CATEGORY FOR EACH SITUATION

Category	Build a House	Draw a House	Tug the Rope	Draw a Man	Block Stacking	TOTAL
Cooperative IV	56	23	67	18	23	37
Precooperative III	2	7	8	4	2	5
Active II	34	63	18	73	68	51
Minimal I	6	4	1	5	3	4
Obstructive 0	3	1	8	1	3	3

TABLE 3

CORRELATION BETWEEN TWO SCORERS OBSERVING A DIFFERENT MEMBER OF THE PAIR OF CHILDREN BEING TESTED

SITUATION	$\bar{X}$	s	r
BUILD-A-HOUSE**	58.67	38.30	.86
	56.96	34.70	
DRAW-A-HOUSE	30.75	37.04	.66
	30.16	35.13	
TUG-THE-ROPE	73.12	24.28	.60
	75.29	28.81	
DRAW-A-MAN	20.50	32.60	.94
	21.63	30.01	
BLOCK STACKING	26.12	26.62	.93
	24.88	25.81	

**24 pair of observations were used in all computations.

TABLE 4

INTERCORRELATIONS AMONG MEASURES

USING FREQUENCY OF COOPERATIVE BEHAVIOR

AS RAW SCORE

	D-H	T-R	D-M	BS	X	s
BUILD-A-HOUSE*	.24	-.31	.22	.02	58.00	34.76
DRAW-A-HOUSE		.05	.31	.33	30.08	32.32
TUG-THE-ROPE			-.08	.10	73.88	24.40
DRAW-A-MAN				.21	21.08	33.63
BLOCK STACKING					25.54	25.71

*Data are reported on 24 pair of children.

With evidence of a common source of variance, it is reasonable to consider a composite score for cooperation. Using the present data (deleting the Tug-the-Rope situation) the corrected split half reliability of a four item test of cooperation is .53 indicating a reasonably high level of internal stability.

An analysis was conducted to determine if cooperative behavior was related to the age or the sex of the Ss. The results are presented in Table 5. Generally, sex of the dyad is unrelated to the appearance of cooperative behavior. Tug-the-Rope, again, is an exception. Girls are apparently more cooperative than boys on this task.

Build-a-House and Block Stacking are positively correlated with age. The older the child, the greater his tendency to cooperate on these two tasks. Both situations require Ss to manipulate materials in order to build a structure. The development of motor skill may be an important component in performance on these particular measures. One interpretation of this finding is that the development of social skills in specific situations may depend on the prior development of motor skills needed for the task. The two measures that required skills at drawing showed little effect of age.

These situations also produced relatively few cooperative responses (See Table 2). The four and five year olds appeared to have more difficulty with performing the drawing tasks, tasks which required finer motor coordination. It would be of interest to determine if the amount of cooperative behavior increases as skill at drawing tasks develop. Recent research supporting Piaget's (1952) notion that social development parallels cognitive development (Bardin and Moan, 1972) would indicate that this may be a fruitful area for investigation.

CONCLUSIONS

Several conclusions can be made regarding the measurement of cooperative behavior in young children.

1. The tendency for children to cooperate varies with situation.

2. The behavior of each member of a pair cannot be treated as statistically independent.

TABLE 5

COORELATION OF FREQUENCY OF COOPERATION SCORES WITH AGE AND SEX

MEASURE*	SEX	AGE
BUILD-A-HOUSE	-.14	.35
DRAW-A-HOUSE	-.06	.14
TUG-THE-ROPE	.44	-.13
DRAW-A-MAN	-.03	.13
BLOCK STACKING	.01	.23
COMPOSITE**	.03	.29

*Based on observations of 24 pairs of children

**Composite score formed by summing across all five measures.

3. Cooperation defined as a complex, hetergeneous concept accounts for a small but relatively stable amount of variance across situations.

4. The data indicate reasonable internal stability of the measure.

5. Relationships between age, sex and frequency of cooperative responses were noted.

REFERENCES

Doland, D. J., and Adelberg, K. The learning of sharing behavior. Child Development, 1967, 38, 695-700

Fisher, W. F. Sharing in preschool children as a function of amount and type of reinforcement. Genetic Psychology Monographs, 1963, 68, 215-245

Harter, S. Mental age, I.Q., and motivational factors in the discrimination learning set performance of normal and retarded children. Journal of Experimental Child Psychology, 1967, 5, 123-141

Handion, B. J. and Gross, P. The development of sharing behavior. Journal of Abnormal and Social Psychology, 1959, 59, 425-428

Jacobson, L. I., Berger, S. E., Bergman, R. L., Millham, J., and Greeson, L. E. Effects of age, sex, systematic conceptual learning, acquisition of learning sets, and programmed social interaction on the intellectual and conceptual development of preschool children from poverty background. Child Development, 1971, 42, 1399-1415

Nelson, L. and Madsen, M.C. Cooperation in four-year olds as a function of reward contingency and subculture. Developmental Psychology, 1969, 40, 340-344

McDonald, D. L., and Paulson, F. L. The evaluation of Sesame Street's social goals. Paper read at the meeting of the Association for Childhood Education International, Milwaukie, 1971 (ERIC Documents in Early Childhood Education)

Parten, M. B. Social participation among preschool children. Journal of Abnormal and Social Psychology, 1932, 27, 243-269

Parten, M. B. Leadership among preschool children. Journal of Abnormal and Social Psychology, 1933, 27, 430-440

Paulson, F. L., Whittemore, S. L., McDonald, D. L., Hirshon, S., and Tripplet, T. A. Scorers and examiner's manual for the Oregon Preschool Test of Interpersonal Cooperation. Monmouth, Oregon: Teaching Research, 1971b

Paulson, F. L., Paulson, P. R., Whittemore, S. L. and McDonald, D. L. Handbook of information on interpersonal strategies in the behavior of young children. Monmouth, Oregon: Teaching Research, 1971a (ERIC documents in Early Childhood Education, P50051S1)

Pena, D. and Miller, G. Analysis of children's social skills development and their reactions to a preschool television program. Paper read at a symposium, Issues and procedures in fostering cognitive development and/or mental health in preschool children, American Psychological Association, Washington, 1971

Piaget, J. The origins of intelligence in children. New York: International Universities Press, 1952

Presbie, R. J., and Kanareff, V. T. Sharing in children as a function of the number of shares and reciprocity. The Journal of Genetic Psychology, 1970, 116, 31-44

Rardin, D. R., and Moan, C. E. Peer interaction and cognitive development. Child Development, 1971, 42, 1685-1699

Sacks, E. L. Intelligence scores as a function of experimentally established social relationships between child and examiner. Journal of Abnormal and Social Psychology, 1952, 47, 354-358

Torrance, P. E. Small group behavior of 5-year-old children under three kinds of educational stimulation. Journal of Experimental Education, 1970, 38, 79-82

Weislogel, R. L. and Schwartz, P. A. Some practical and theoretical problems in situational testing. Educational and Psychological Measurement, 1955, 15, 39-46